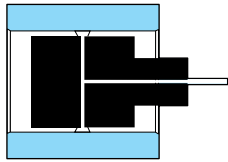


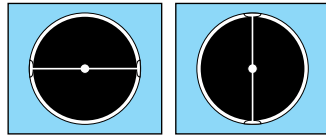
# List of Measuring Methods >>>

## Diameter/Roundness

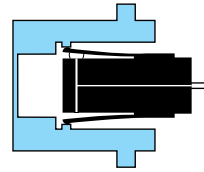
### Inner Diameter



Inner diameter can be measured by inserting a plug type measuring head with air blow nozzles on both sides. Taper can be measured by moving the head in the axial direction.

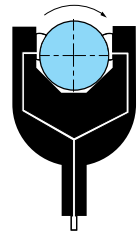


Roundness (cylindricity) can be measured by rotating the measuring head one revolution.



Contact type indirect air blow head (leaf type) is used when the measuring surface is confined or rough.

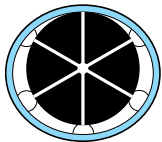
### Outer Diameter



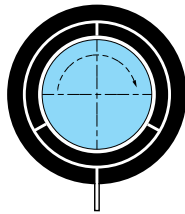
Contact type indirect air blow head (leaf type) is used when the measuring surface is confined or rough.

## Average Diameter/Triangle

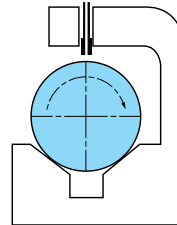
### Inner Diameter



The average inner diameter can be measured by placing three or more jets at equiangular locations. Roundness can be measured by rotating the workpiece with three nozzles.



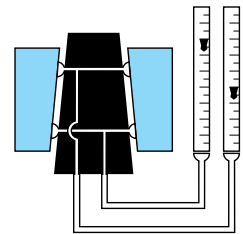
The average outer diameter can be measured by placing three or more nozzles at equiangular locations. Roundness deformation can be measured by rotating the workpiece.



Roundness can be measured by mounting a nozzle on a stand and rotating the workpiece on a V stand or a measuring stand.

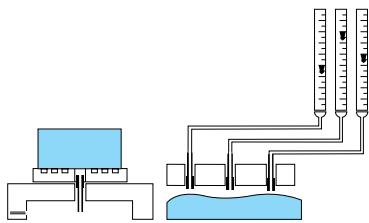
## Taper

### Inner Diameter



Taper can be measured from the difference in float position by simply inserting the workpiece.

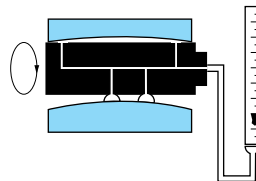
## Flatness



Move a workpiece to the right and left on a nozzle built-in measuring stand, or use a dedicated measuring unit with several built-in nozzles to measure flatness.

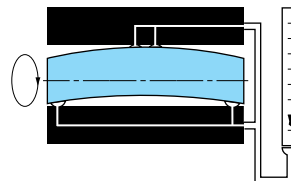
## Roundness

### Inner Diameter

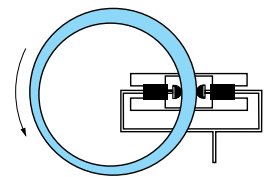


Rotate a measuring head with four nozzles like the one shown above 180° in order to measure roundness.

### Outer Diameter

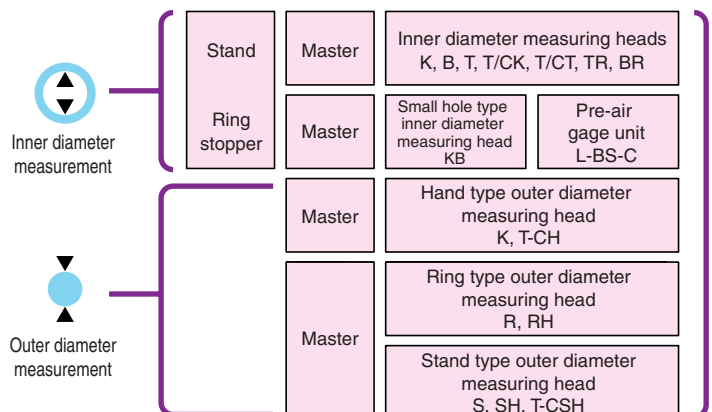


## Concentricity / Eccentricity



Concentricity can be measured by measuring the wall thickness.

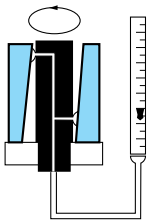
### Air Micrometer · Air=Electric Micrometer System Diagram



## Squareness

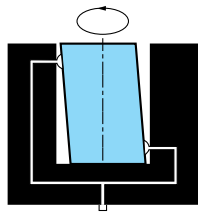
## Parallelism

### Inner Diameter



Squareness can be measured by rotating a dedicated measuring head with a stepped nozzle as shown above 180°.

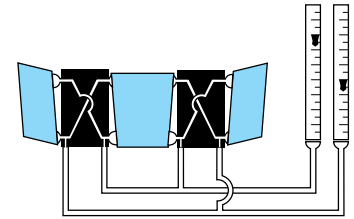
### Outer Diameter



### Angled Items



Squareness is measured by providing a nozzle on one side of the work-piece.



Parallelism can be measured by using a similar procedure as that use to measure squareness.

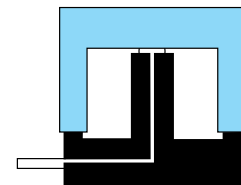
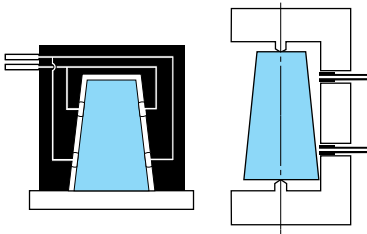
## Taper

## Depth

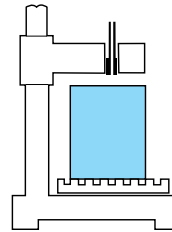
## Height

## Thickness

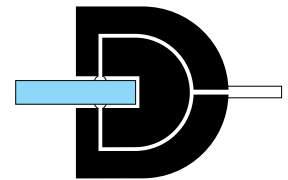
### Inner Diameter



Use a dedicated measuring instrument with a precision head.



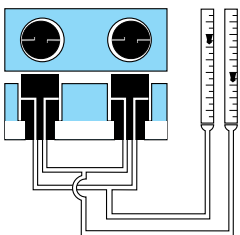
Measurement can be performed from a nozzle mounted on a stand.



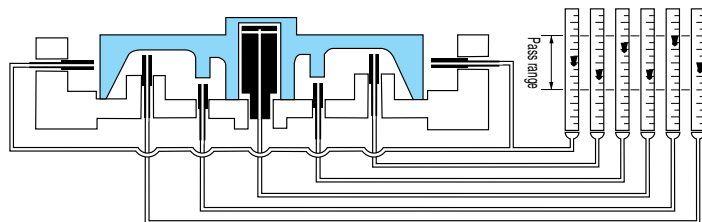
Using a measuring head with air blow in both sides eliminates error due to dust or a warp.

## Distance Between Centers

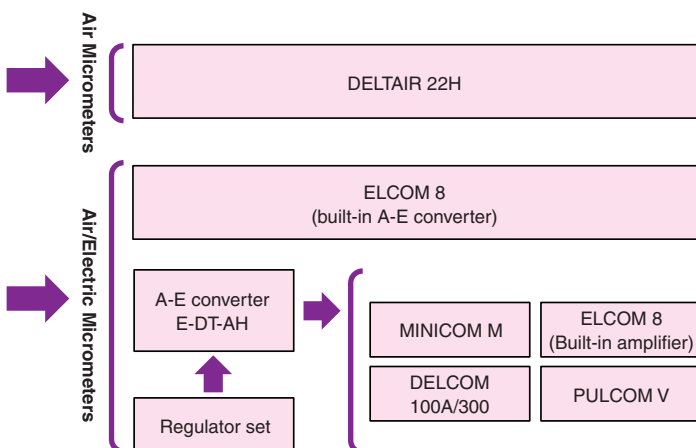
## Multi-Point Simultaneous Measurement



The distance between centers can be measured from the difference in the movement of the floats by simply placing the workpiece inside.



The dimensions at multiple points can be simultaneously measured by using a dedicated measuring instrument. This enables one-glance judgment of whether or not the workpiece is within tolerances by simply placing it in the device.



### Measuring Head Ordering Method

Product code — Model — Lower limit — Upper limit — Micrometer

Example : 0995207-B03- $\phi$  8.000- $\phi$  8.030-DL

DELTAIR : DL

A/E converter : AE

### Master Ordering method

Product code — Lower limit — Upper limit

Example : Product code:0995007- $\phi$  8.000- $\phi$  8.030

# Inner Diameter Measuring Heads >>>

## Inner Diameter Measuring Heads Usage Examples



<p>Ordinary</p>	<p>Models T10, 15, 25, 30</p>	<p>Models B03, 05</p>
<p>Determining Measuring Position</p>	<p>Models T10, 15</p>	
<p>Rough Surface</p>	<p>Models TR09, 15</p>	<p>Model BR02</p>
<p>Small Diameter</p>	<p>Model KB</p>	<p>Model K04</p>
<p>When Mounted on Stand</p>	<p>Replacement bushing (for 100H &amp; 200H)  <math>\phi 12.5</math> ID bushing is for <math>\phi 12</math> handle.                  Product code 0996501  <math>\phi 18.5</math> ID bushing is for <math>\phi 18</math> handle.                  Product code 0996502</p> <p>Model 100H horizontal stand                  Product code 0995600</p> <p>Model 200H horizontal stand                  Product code 0995601</p>	

# Direct Blow Type (Non Contact) Inner Diameter Measuring Heads



Model	K04	K10			
$\phi 4$   $\phi 7$					
Model	B03	B05	T10	T15	T20
$\phi 7+$   $\phi 10$					
$\phi 10+$   $\phi 18$					
$\phi 18+$   $\phi 40$					<b>T25</b> 
$\phi 40+$   $\phi 70$					
$\phi 70+$   $\phi 100$					<b>T30</b> 

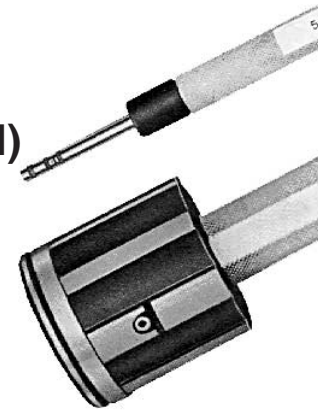
## Product Code Table

0995204	$\phi 4 < \phi D \leq \phi 7$
0995207	$\phi 7 < \phi D \leq \phi 10$
0995210	$\phi 10 < \phi D \leq \phi 14$
0995214	$\phi 14 < \phi D \leq \phi 18$
0995218	$\phi 18 < \phi D \leq \phi 25$
0995225	$\phi 25 < \phi D \leq \phi 30$
0995230	$\phi 30 < \phi D \leq \phi 35$

0995235	$\phi 35 < \phi D \leq \phi 40$
0995240	$\phi 40 < \phi D \leq \phi 45$
0995245	$\phi 45 < \phi D \leq \phi 50$
0995250	$\phi 50 < \phi D \leq \phi 55$
0995255	$\phi 55 < \phi D \leq \phi 60$
0995260	$\phi 60 < \phi D \leq \phi 65$
0995265	$\phi 65 < \phi D \leq \phi 70$

0995270	$\phi 70 < \phi D \leq \phi 75$
0995275	$\phi 75 < \phi D \leq \phi 80$
0995280	$\phi 80 < \phi D \leq \phi 85$
0995285	$\phi 85 < \phi D \leq \phi 90$
0995290	$\phi 90 < \phi D \leq \phi 95$
0995295	$\phi 95 < \phi D \leq \phi 100$

# Direct Blow Type (Non Contact) Inner Diameter Measuring Heads (with carbide steel)



Model	T-CK05	T-CK10	
$\phi 4$   $\phi 7$			
Model	T-CB05	T-CT10	T-CT20
$\phi 7+$   $\phi 10$			
$\phi 10+$   $\phi 18$			
$\phi 18+$   $\phi 30$			
$\phi 30+$   $\phi 70$			T-CT25
$\phi 70+$   $\phi 90$			

## Product Code Table

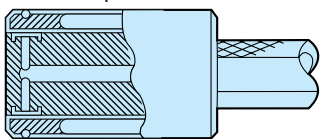
0995304	$\phi 4 < \phi D \leq \phi 7$
0995307	$\phi 7 < \phi D \leq \phi 10$
0995310	$\phi 10 < \phi D \leq \phi 15$
0995315	$\phi 15 < \phi D \leq \phi 18$
0995322	$\phi 18 < \phi D \leq \phi 25$
0995325	$\phi 25 < \phi D \leq \phi 28$
0995328	$\phi 28 < \phi D \leq \phi 30$

0995330	$\phi 30 < \phi D \leq \phi 35$
0995335	$\phi 35 < \phi D \leq \phi 40$
0995340	$\phi 40 < \phi D \leq \phi 45$
0995345	$\phi 45 < \phi D \leq \phi 50$
0995350	$\phi 50 < \phi D \leq \phi 55$
0995355	$\phi 55 < \phi D \leq \phi 60$
0995360	$\phi 60 < \phi D \leq \phi 65$

0995365	$\phi 65 < \phi D \leq \phi 70$
0995370	$\phi 70 < \phi D \leq \phi 75$
0995375	$\phi 75 < \phi D \leq \phi 80$
0995380	$\phi 80 < \phi D \leq \phi 85$
0995385	$\phi 85 < \phi D \leq \phi 90$

# Leaf Type (Contact Indirect Blow) Inner Diameter Measuring Heads

Relationship of Left and Nozzle



# Small Hole Type Inner Diameter Measuring Heads



Model	TR09	BR02												
$\phi 10+$   $\phi 14$														
$\phi 14+$   $\phi 18$														
$\phi 18+$   $\phi 75$	<b>Model TR15</b> <table border="1"> <thead> <tr> <th><math>\phi D</math></th> <th><math>\phi D_1</math></th> </tr> </thead> <tbody> <tr> <td><math>\phi 18+ - \phi 40</math></td> <td>18</td> </tr> <tr> <td><math>\phi 40+ - \phi 75</math></td> <td>25</td> </tr> </tbody> </table>	$\phi D$	$\phi D_1$	$\phi 18+ - \phi 40$	18	$\phi 40+ - \phi 75$	25	<table border="1"> <thead> <tr> <th><math>\phi D</math></th> <th><math>\phi D_1</math></th> </tr> </thead> <tbody> <tr> <td><math>\phi 18+ - \phi 40</math></td> <td>18</td> </tr> <tr> <td><math>\phi 40+ - \phi 75</math></td> <td>25</td> </tr> </tbody> </table>	$\phi D$	$\phi D_1$	$\phi 18+ - \phi 40$	18	$\phi 40+ - \phi 75$	25
	$\phi D$	$\phi D_1$												
$\phi 18+ - \phi 40$	18													
$\phi 40+ - \phi 75$	25													
$\phi D$	$\phi D_1$													
$\phi 18+ - \phi 40$	18													
$\phi 40+ - \phi 75$	25													
$\phi 75+$   $\phi 120$	<table border="1"> <thead> <tr> <th><math>\phi D</math></th> <th><math>\phi D_1</math></th> </tr> </thead> <tbody> <tr> <td><math>\phi 75+ - \phi 90</math></td> <td>25</td> </tr> <tr> <td><math>\phi 90+ - \phi 120</math></td> <td>32</td> </tr> </tbody> </table>	$\phi D$	$\phi D_1$	$\phi 75+ - \phi 90$	25	$\phi 90+ - \phi 120$	32	<table border="1"> <thead> <tr> <th><math>\phi D</math></th> <th><math>\phi D_1</math></th> </tr> </thead> <tbody> <tr> <td><math>\phi 75+ - \phi 90</math></td> <td>25</td> </tr> <tr> <td><math>\phi 90+ - \phi 120</math></td> <td>32</td> </tr> </tbody> </table>	$\phi D$	$\phi D_1$	$\phi 75+ - \phi 90$	25	$\phi 90+ - \phi 120$	32
$\phi D$	$\phi D_1$													
$\phi 75+ - \phi 90$	25													
$\phi 90+ - \phi 120$	32													
$\phi D$	$\phi D_1$													
$\phi 75+ - \phi 90$	25													
$\phi 90+ - \phi 120$	32													

Model	KB
$\phi 1$   $\phi 4$	
$\phi 4+$   $\phi 10$	
$\phi 10+$   $\phi 18$	
$\phi 18+$   $\phi 20$	

\*A pre-air gage (L-BS-C) is required to use this measuring head in combination with DELTAIR.

## Product Code Table (TR09, TR15, BR02)

0995410	$\phi 10 < \phi D \leq \phi 14$
0995414	$\phi 14 < \phi D \leq \phi 18$
0995418	$\phi 18 < \phi D \leq \phi 25$
0995425	$\phi 25 < \phi D \leq \phi 30$
0995430	$\phi 30 < \phi D \leq \phi 35$
0995435	$\phi 35 < \phi D \leq \phi 40$
0995440	$\phi 40 < \phi D \leq \phi 45$
0995445	$\phi 45 < \phi D \leq \phi 50$
0995450	$\phi 50 < \phi D \leq \phi 55$

0995455	$\phi 55 < \phi D \leq \phi 60$
0995460	$\phi 60 < \phi D \leq \phi 65$
0995465	$\phi 65 < \phi D \leq \phi 70$
0995470	$\phi 70 < \phi D \leq \phi 75$
0995475	$\phi 75 < \phi D \leq \phi 80$
0995480	$\phi 80 < \phi D \leq \phi 85$
0995485	$\phi 85 < \phi D \leq \phi 90$
0995490	$\phi 90 < \phi D \leq \phi 95$
0995495	$\phi 95 < \phi D \leq \phi 100$

## Product Code Table (KB)

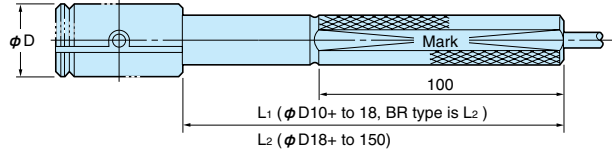
0995501	$\phi 1 < \phi D \leq \phi 1.5$
0995502	$\phi 1.5 < \phi D \leq \phi 2$
0995503	$\phi 2 < \phi D \leq \phi 3$
0995505	$\phi 3 < \phi D \leq \phi 4$
0995504	$\phi 4 < \phi D \leq \phi 10$
0995510	$\phi 10 < \phi D \leq \phi 15$
0995515	$\phi 15 < \phi D \leq \phi 20$

# Handle Unit

## Specifications

● For Models T, B, TR & BR

Applicable Model	Standard	Type1	Type2	Type3	Type4
Product code	0995571	0995572	0995573	0995574	0995575
L1	120	150	200	300	400
L2	100	150	200	300	400



# Standard Ring Stopper

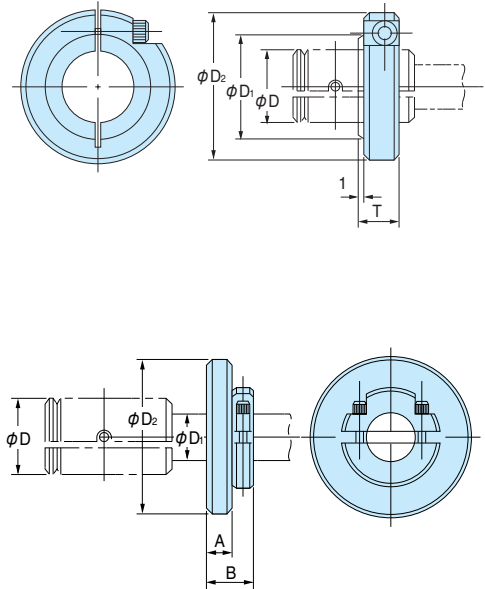
## Specifications

● Ring Stopper for Measuring Head

Product code	φ D	φ D 1	φ D 2	T
0995581	4 - 7	12	20	7
0995582	7+ - 10	15	22	7
0995583	10+ - 14	20	28	7
0995584	14+ - 20	25	34	7
0995585	20+ - 28	34	46	9
0995586	28+ - 40	44	60	9
0995587	40+ - 56	64	82	11
0995588	56+ - 78	86	104	11
0995590	78+ - 110	120	144	13
0995592	110+ - 150	160	182	13

● Ring Stoppers for Handles

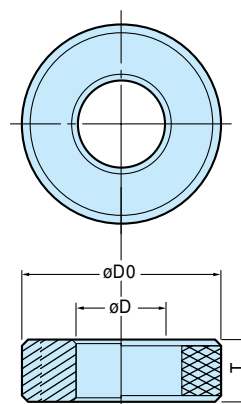
Product code	φ D	φ D 1	φ D 2	A	B
0995593	25 - 40	17	50	5	13
0995594	40+ - 50	25	60	5	13
0995596	50+ - 70	25	80	5	13
0995597	70+ - 110	32	120	5	15
0995598	110+ - 150	32	164	5	15



\*Specify the order code to order the handle and ring stopper.  
The standard configuration is specified when there is no handle specification.

# Masters for Inner Diameter Measuring Heads

Specifications		
●Models for K, B, T-CK, T-CB, T-CT, TR, BR		
$\phi D$	$\phi D0$	T
4 - 5	30	10
5+ - 8		12
8+ - 10	34	15
10+ - 14		
14+ - 20	42	20
20+ - 26		
26+ - 32	58	25
32+ - 38		
38+ - 44	74	30
44+ - 50		
50+ - 65	104	38
65+ - 80		
80+ - 95	144	38
95+ - 110		
110+ - 130	192	38
130+ - 150		
130+ - 150	220	
●For Model KB		
$\phi D$	$\phi D0$	T
1 - 3	16	3
3+ - 6	20	4
6+ - 10	25	5
10+ - 14	32	7
14+ - 18	40	
18+ - 20	50	



## Product Code Table (K, B, T-CK, T-CB, T-CT, TR, BR)

0995004	$\phi 4 < \phi D \leq \phi 7$
0995007	$\phi 7 < \phi D \leq \phi 10$
0995010	$\phi 10 < \phi D \leq \phi 15$
0995015	$\phi 15 < \phi D \leq \phi 20$
0995020	$\phi 20 < \phi D \leq \phi 25$
0995025	$\phi 25 < \phi D \leq \phi 30$
0995030	$\phi 30 < \phi D \leq \phi 35$

0995035	$\phi 35 < \phi D \leq \phi 40$
0995040	$\phi 40 < \phi D \leq \phi 45$
0995045	$\phi 45 < \phi D \leq \phi 50$
0995050	$\phi 50 < \phi D \leq \phi 55$
0995055	$\phi 55 < \phi D \leq \phi 60$
0995060	$\phi 60 < \phi D \leq \phi 65$
0995065	$\phi 65 < \phi D \leq \phi 70$

0995070	$\phi 70 < \phi D \leq \phi 75$
0995075	$\phi 75 < \phi D \leq \phi 80$
0995080	$\phi 80 < \phi D \leq \phi 85$
0995085	$\phi 85 < \phi D \leq \phi 90$
0995090	$\phi 90 < \phi D \leq \phi 95$
0995095	$\phi 95 < \phi D \leq \phi 100$

## Product Code Table (KB)

0995550	$\phi 1 < \phi D \leq \phi 1.5$
0995551	$\phi 1.5 < \phi D \leq \phi 2$
0995552	$\phi 2 < \phi D \leq \phi 3$
0995553	$\phi 3 < \phi D \leq \phi 4$
0995554	$\phi 4 < \phi D \leq \phi 10$
0995560	$\phi 10 < \phi D \leq \phi 15$
0995565	$\phi 15 < \phi D \leq \phi 20$

# Outer Diameter Measuring Heads >>>

## Hand Type Outer Diameter Measuring Heads



## Ring Type Outer Diameter Measuring Heads



Model	H	T-CH (V carbide piece)
$\phi 15$   $\phi 20$		
$\phi 20+$   $\phi 60$		
$\phi 60+$   $\phi 80$		
$\phi 80+$   $\phi 100$		
$\phi 100+$   $\phi 120$		

Model	R	RH
$\phi 4$   $\phi 10$		
$\phi 10+$   $\phi 20$		
$\phi 20+$   $\phi 30$		
$\phi 30+$   $\phi 40$		
$\phi 40+$   $\phi 50$		

### Product Code Table (Hand Type)

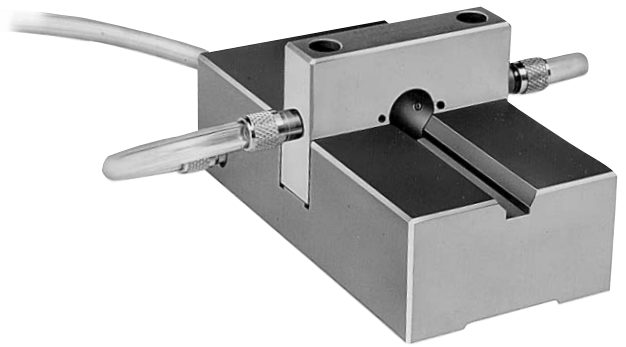
H	T-CH	Specifications
0995751	0995800	$\phi 15 < \phi D \leq \phi 20$
0995752	0995820	$\phi 20 < \phi D \leq \phi 25$
0995753	0995825	$\phi 25 < \phi D \leq \phi 30$
0995754	0995830	$\phi 30 < \phi D \leq \phi 35$
0995755	0995835	$\phi 35 < \phi D \leq \phi 40$
0995756	0995840	$\phi 40 < \phi D \leq \phi 45$
0995757	0995845	$\phi 45 < \phi D \leq \phi 50$
0995758	0995850	$\phi 50 < \phi D \leq \phi 55$
0995759	0995855	$\phi 55 < \phi D \leq \phi 60$

H	T-CH	Specifications
0995760	0995860	$\phi 60 < \phi D \leq \phi 65$
0995761	0995865	$\phi 65 < \phi D \leq \phi 70$
0995762	0995870	$\phi 70 < \phi D \leq \phi 75$
0995763	0995875	$\phi 75 < \phi D \leq \phi 80$
0995764	0995880	$\phi 80 < \phi D \leq \phi 85$
0995765	0995885	$\phi 85 < \phi D \leq \phi 90$
0995766	0995886	$\phi 90 < \phi D \leq \phi 95$
0995767	0995887	$\phi 95 < \phi D \leq \phi 100$

### Product Code Table (Ring Type)

R, RH	Specifications
0997304	$\phi 4 < \phi D \leq \phi 10$
0997310	$\phi 10 < \phi D \leq \phi 15$
0997315	$\phi 15 < \phi D \leq \phi 20$
0997320	$\phi 20 < \phi D \leq \phi 25$
0997325	$\phi 25 < \phi D \leq \phi 30$
0997330	$\phi 30 < \phi D \leq \phi 35$
0997335	$\phi 35 < \phi D \leq \phi 40$
0997340	$\phi 40 < \phi D \leq \phi 45$
0997345	$\phi 45 < \phi D \leq \phi 50$

# Stand Type Outer Diameter Measuring Heads



Model	S	Model	SH	T-C SH
$\phi 5$   $\phi 10$		$\phi 5$   $\phi 10$	_____	_____
$\phi 10+$   $\phi 20$		$\phi 10+$   $\phi 20$	_____	_____
$\phi 20+$   $\phi 30$		$\phi 20+$   $\phi 35$		
$\phi 30+$   $\phi 40$		$\phi 35+$   $\phi 45$		
$\phi 40+$   $\phi 50$		$\phi 45+$   $\phi 60$		
$\phi 50+$   $\phi 60$	_____	$\phi 60+$   $\phi 70$		

## Product Code Table (Stand Type)

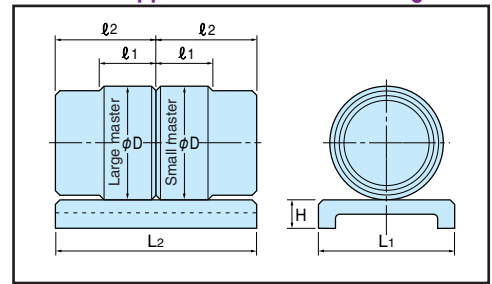
0997405	$\phi 5 < \phi D \leq \phi 10$	0997430	$\phi 30 < \phi D \leq \phi 35$	0997455	$\phi 55 < \phi D \leq \phi 60$
0997410	$\phi 10 < \phi D \leq \phi 15$	0997435	$\phi 35 < \phi D \leq \phi 40$	0997460	$\phi 60 < \phi D \leq \phi 65$
0997415	$\phi 15 < \phi D \leq \phi 20$	0997440	$\phi 40 < \phi D \leq \phi 45$	0997465	$\phi 65 < \phi D \leq \phi 70$
0997420	$\phi 20 < \phi D \leq \phi 25$	0997445	$\phi 45 < \phi D \leq \phi 50$		
0997425	$\phi 25 < \phi D \leq \phi 30$	0997450	$\phi 50 < \phi D \leq \phi 55$		

# Masters for Hand Type Outer Diameter Measuring Heads

One each of large and small master for a hand-type measuring head is mounted on the master stand.



## Outer Appearance/Dimension Diagram



### Specifications

$\phi D$	$l 1$	$l 2$	L 1	L 2	H
$\phi 15+$ - $\phi 20$	20	35	22	70	10
$\phi 20+$ - $\phi 30$	20	35	40	70	10
$\phi 30+$ - $\phi 45$	20	35	50	70	10
$\phi 45+$ - $\phi 60$	20	40	60	80	12
$\phi 60+$ - $\phi 80$	25	45	80	90	15
$\phi 80+$ - $\phi 100$	25	45	100	90	15
$\phi 100+$ - $\phi 120$	30	50	125	100	20

### Product Code Table

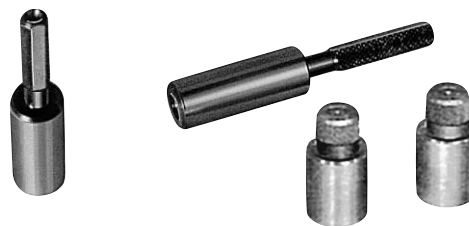
0995901	$\phi 15 < \phi D \leq \phi 20$
0995902	$\phi 20 < \phi D \leq \phi 25$
0995903	$\phi 25 < \phi D \leq \phi 30$
0995904	$\phi 30 < \phi D \leq \phi 35$
0995905	$\phi 35 < \phi D \leq \phi 40$
0995906	$\phi 40 < \phi D \leq \phi 45$

0995907	$\phi 45 < \phi D \leq \phi 50$
0995908	$\phi 50 < \phi D \leq \phi 55$
0995909	$\phi 55 < \phi D \leq \phi 60$
0995910	$\phi 60 < \phi D \leq \phi 65$
0995911	$\phi 65 < \phi D \leq \phi 70$
0995912	$\phi 70 < \phi D \leq \phi 75$

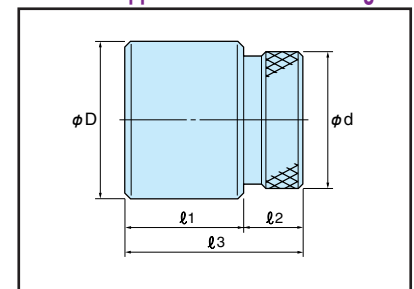
0995913	$\phi 75 < \phi D \leq \phi 80$
0995914	$\phi 80 < \phi D \leq \phi 85$
0995915	$\phi 85 < \phi D \leq \phi 90$
0995916	$\phi 90 < \phi D \leq \phi 95$
0995917	$\phi 95 < \phi D \leq \phi 100$

# Masters for Ring Type/Stand Type Outer Diameter Measuring Heads

One large and one small master are used for each ring type or stand type measuring head. Magnification adjustment is performed by interchanging the large and small masters.



## Outer Appearance/Dimension Diagram



### Specifications

$\phi D$	$\phi d$	$l 1$	$l 2$	$l 3$
4 - 6	D-1	25	25	50
6+ - 10	5			
10+ - 15	8			
15+ - 20	12			
20+ - 32	18	30	15	45
32+ - 45	28			
45+ - 50	49			

### Product Code Table

0995931	$\phi 4 < \phi D \leq \phi 10$
0995932	$\phi 10 < \phi D \leq \phi 15$
0995933	$\phi 15 < \phi D \leq \phi 20$
0995934	$\phi 20 < \phi D \leq \phi 25$
0995935	$\phi 25 < \phi D \leq \phi 30$

0995936	$\phi 30 < \phi D \leq \phi 35$
0995937	$\phi 35 < \phi D \leq \phi 40$
0995938	$\phi 40 < \phi D \leq \phi 45$
0995939	$\phi 45 < \phi D \leq \phi 50$
0995940	$\phi 50 < \phi D \leq \phi 55$

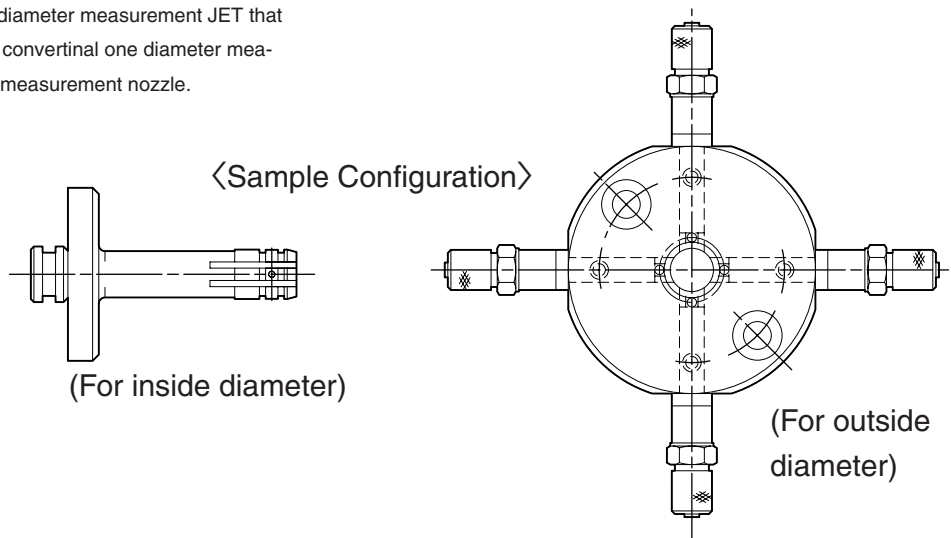
0995941	$\phi 55 < \phi D \leq \phi 60$
0995942	$\phi 60 < \phi D \leq \phi 65$
0995943	$\phi 65 < \phi D \leq \phi 70$

# High-Precision Measuring Heads >>>

## High-Precision JET

Highly accurate JET is an interval and outer diameter measurement JET that improves the repeat accuracy by replacing a conventional one diameter measurement nozzle, and adopting the multiway measurement nozzle.

Used in combination with an A/E converter.  
Supports supply pressure of 0.25 MPa.



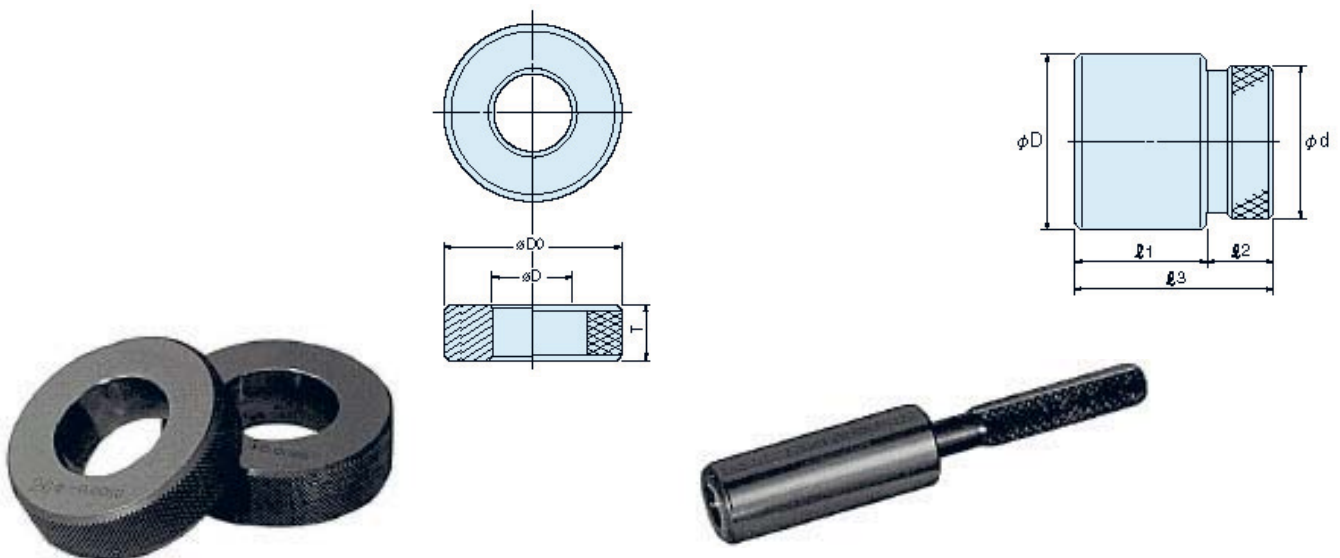
### Specifications

Product code		Measuring range	A Type		B Type		C Type	
Inside diameter	Outside diameter		Measuring range	Repeatability	Measuring range	Repeatability	Measuring range	Repeatability
4300613	—	$\phi$ 1.5 to $\phi$ 2.5	5 $\mu$ m	0.2 $\mu$ m	—	—	—	—
4300614	4300617	$\phi$ 2.5 to $\phi$ 4	10 $\mu$ m	0.2 $\mu$ m	—	—	—	—
4300615	4300618	$\phi$ 4 to $\phi$ 7	10 $\mu$ m	0.1 $\mu$ m	15 $\mu$ m	0.15 $\mu$ m	20 $\mu$ m	0.2 $\mu$ m
4300616	4300619	$\phi$ 7 to $\phi$ 14	10 $\mu$ m	0.1 $\mu$ m	15 $\mu$ m	0.15 $\mu$ m	20 $\mu$ m	0.2 $\mu$ m

Note: Contact your sales representative for diameters over  $\phi$  14 or multiple unit installations and installation methods.

## High-precision JET Master

The high-precision JET masters are used in two-master sets, one upper limit and one for lower limit. Upper limit and lower limit masters are changed to adjust magnification. A middle limit master is also available when required.



Product code	$\phi$ D	$\phi$ D0	T
4300620	Greater than $\phi$ 1.5, up to $\phi$ 3	16	3
	Greater than $\phi$ 3, up to $\phi$ 4	20	4
4300621	Greater than $\phi$ 4, up to $\phi$ 5	30	10
	Greater than $\phi$ 5, up to $\phi$ 8	30	12
4300622	Greater than $\phi$ 8, up to $\phi$ 14	34	15

Product code	$\phi$ D	$\phi$ d	l 1	l 2	l 3
4300623	$\phi$ 2.5 to $\phi$ 6	5	25	25	50
4300624	Greater than $\phi$ 6, up to $\phi$ 10	5	25	25	50
4300625	Greater than $\phi$ 10, up to $\phi$ 14	8	25	25	50

# DELTAIR 22H >>>



## Features

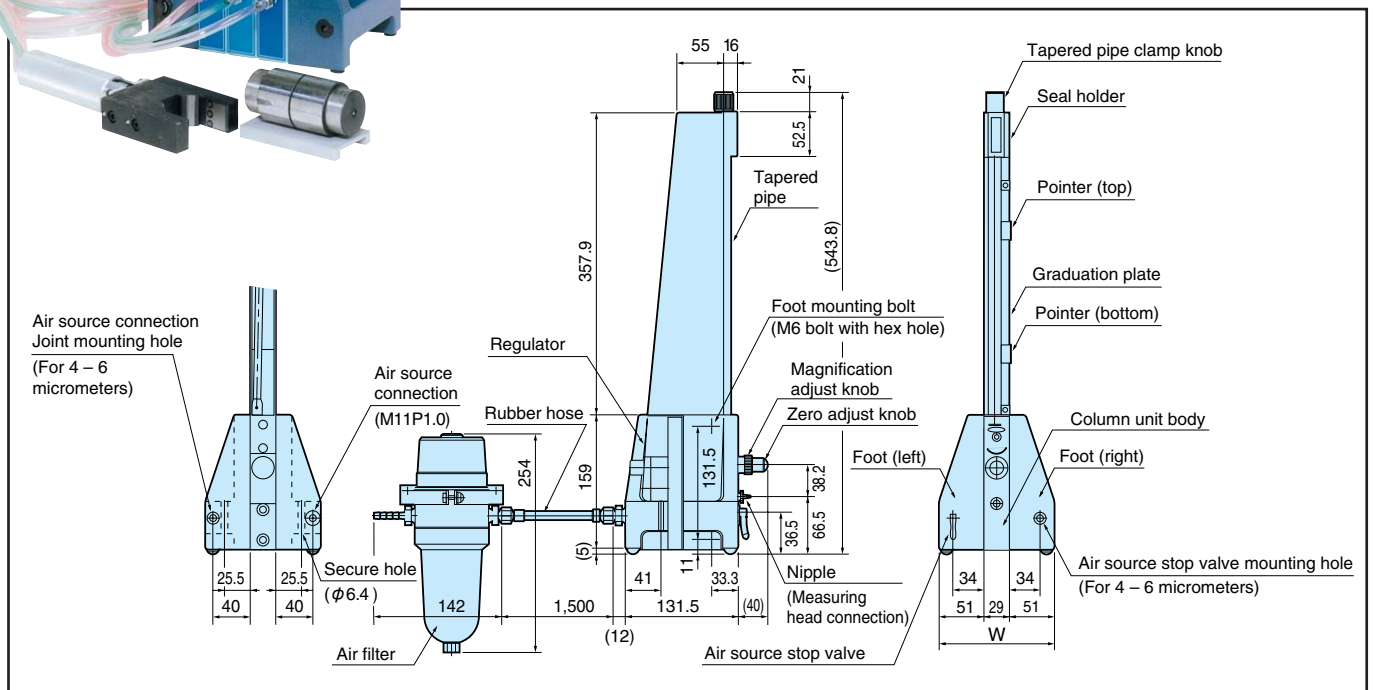
### Easy-to-Use, High Precision

This line of air micrometers is easy to use and provides high precision over an extended time. They are the ideal choice to enhance inspection precision, reduce measuring time and decrease costs.

### Wide Application Range

Single and multi-micrometer types are available for a wide range of applications.

## Outer Appearance/Dimension Diagram



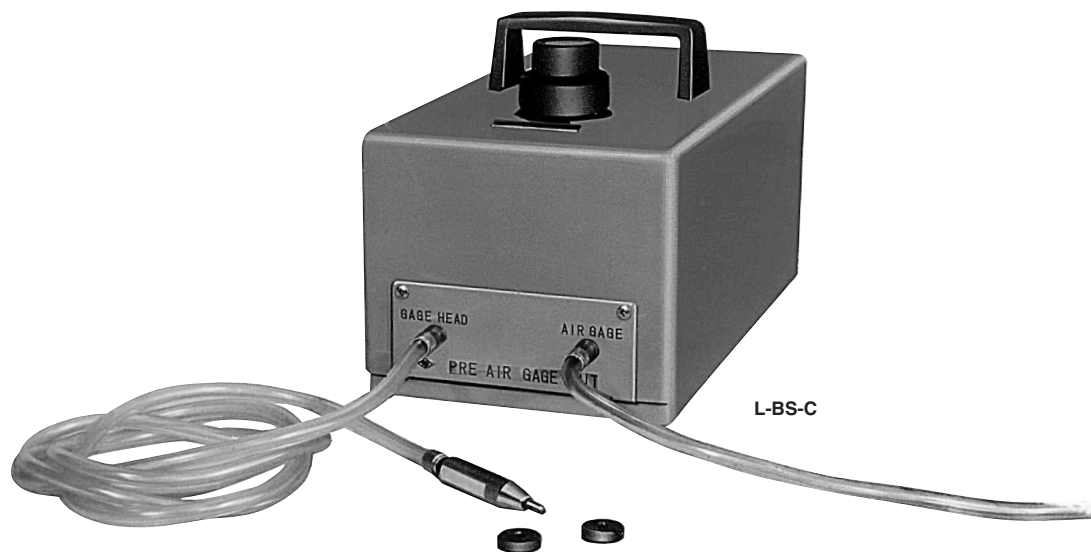
## Specifications

Model	L-GF-22H-□														
Product code	0996001	0996002	0996003	0996004	0996005	0996006	0996007	0996008	0996009	0996010	0996011	0996012	0996013	0996014	0996015
Item	S	2M	3M	4M	5M	6M	7M	8M	9M	10M	11M	12M	13M	14M	15M
No. of columns	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Standard magnification	Specify: 1,000, 2,000, 3,000, 5,000 or 10,000														
Dimensions (W)	131mm	160mm	189mm	218mm	247mm	276mm	305mm	334mm	363mm	392mm	421mm	450mm	479mm	508mm	537mm
(D)	131.5mm														
(H)	543.8mm														
Weight (kg)	6.9	10.4	13.9	17.4	20.9	24.4	27.9	31.4	34.9	38.4	41.9	45.4	48.9	52.4	55.9
Air source	0.3 - 0.7 MPa (3 - 7 kgf/cm <sup>2</sup> )														
Accessories	L-CL-E air filter, 1.5m rubber hose										L-CL-MC air filter, 1.5m rubber hose				

### Specify the magnification

Standard magnification	1,000	2,000	3,000	5,000	10,000
Indication range	220μm	110μm	74μm	44μm	22μm
Effective indication range	150μm	76μm	50μm	30μm	15μm
Scale graduation	Scale interval	5μm	2μm	2μm	1μm
	Scale spacing	5mm	4mm	6mm	5mm
	No. of graduations	44	55	37	44

# Pre-Air Gage Unit >>>



## ■ Features

Used in combination of small-bore measuring head and air micrometer "DELTAIR".

### Specifications

Product code	0996080
Configuration (used with)	Small-diameter hole measuring head
Measuring head	Model KB
Dimensions	140(D) × 160(H) × 335(D) mm
Weight	7.2 kg
Accessories	1.5 m rubber hose, 1.5 m vinyl tube